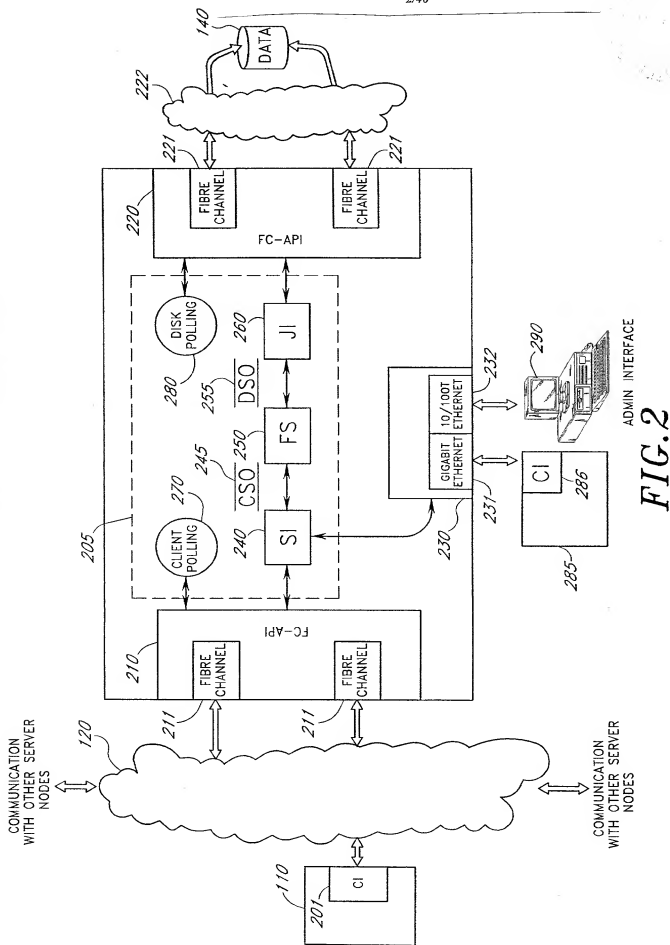


FIG. 1

RECEIVED



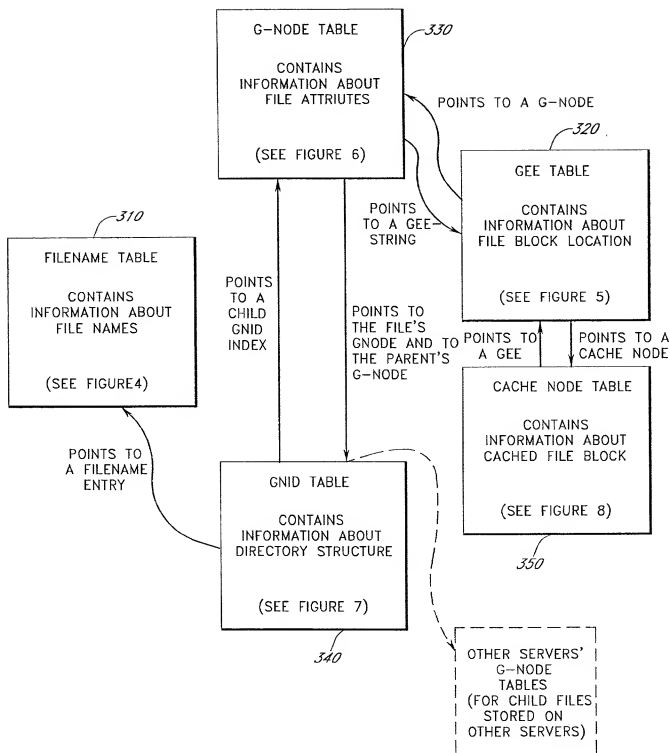


FIG. 3

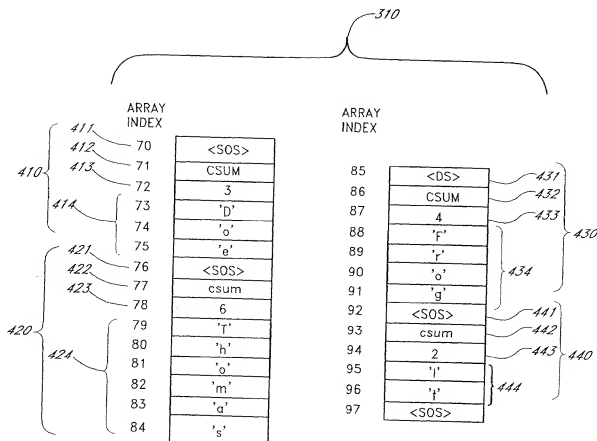
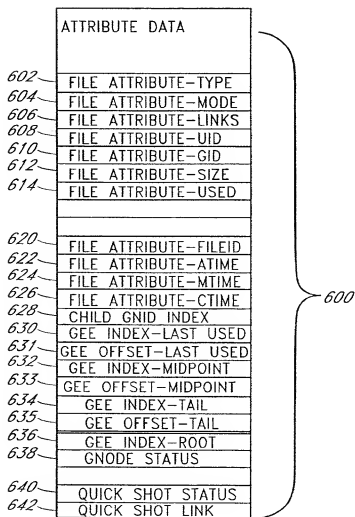


FIG. 4

INDEX	G-CODE	DATA	FILE LOGICAL BLOCK
510	45	GNODE=67, EXTENT=2, ROOT=TRUE	
511	46	DISK LOGICAL BLOCKS: 456,457 DRIVE 13	1
512	47	DISK LOGICAL BLOCKS: 667,668 DRIVE 15	2
513	48	DISK LOGICAL BLOCKS: 112,113 DRIVE 19	3
514	49	DISK LOGICAL BLOCKS: 554,555 DRIVE 2	
515	50	DISK LOGICAL BLOCKS: 458,459 DRIVE 13	4
516	51	DISK LOGICAL BLOCKS: 669,670 DRIVE 15	5
517	52	DISK LOGICAL BLOCKS: 119,120 DRIVE 19	6
518	53	DISK LOGICAL BLOCKS: 556,557 DRIVE 2	
519	54	INDEX 76	
	
520	76	GNODE=67, EXTENT=3, ROOT=FALSE	
521	77	DISK LOGICAL BLOCKS: 460,461,462 DRIVE 13	7
522	78	DISK LOGICAL BLOCKS: 671,672,673 DRIVE 15	8
523	79	DISK LOGICAL BLOCKS: 121,122,123 DRIVE 19	
524	80	INDEX 88	
	
525	88	GNODE=67, EXTENT=3, ROOT=FALSE	
526	89	DISK LOGICAL BLOCKS: 463,464,465 DRIVE 13	9
527	90	DISK LOGICAL BLOCKS: 674,675,676 DRIVE 15	10
528	91	DISK LOGICAL BLOCKS: 124,125,126 DRIVE 19	
529	92	GNODE=43, EXTENT=4, ROOT=FALSE	
	

FIG.5

**FIG. 6**

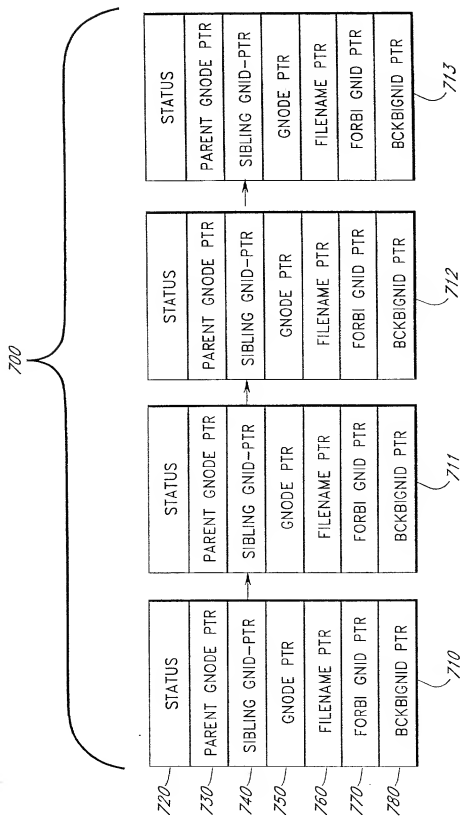
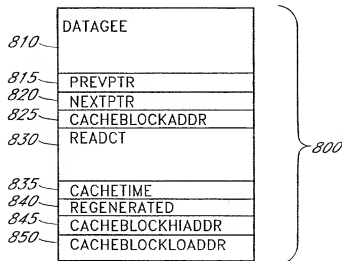


FIG. 7

*FIG. 8A*

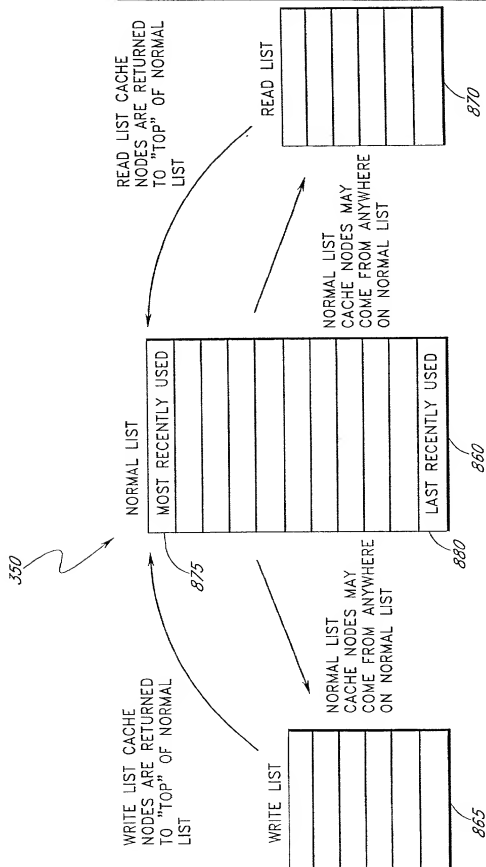


FIG. 8B

200150 00000000

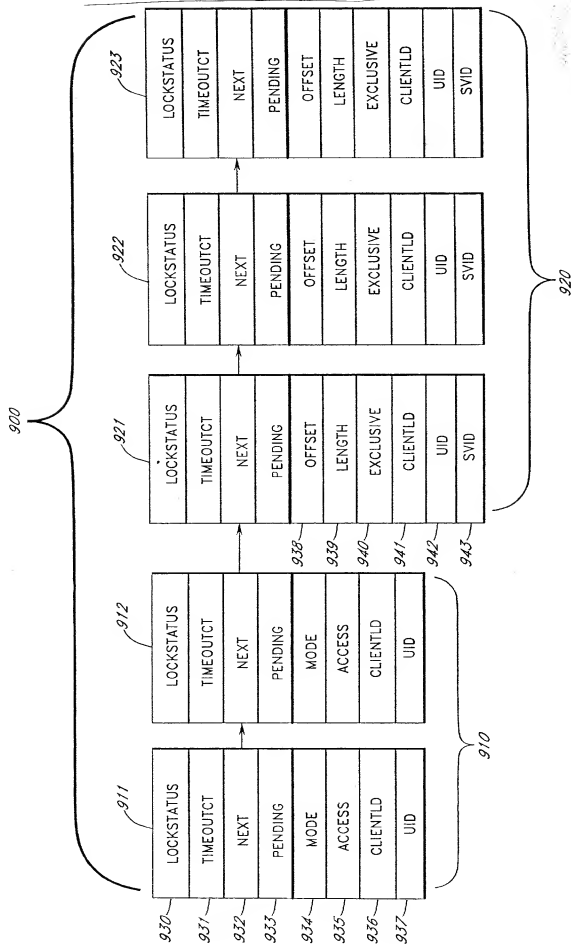


FIG. 9

200703060908

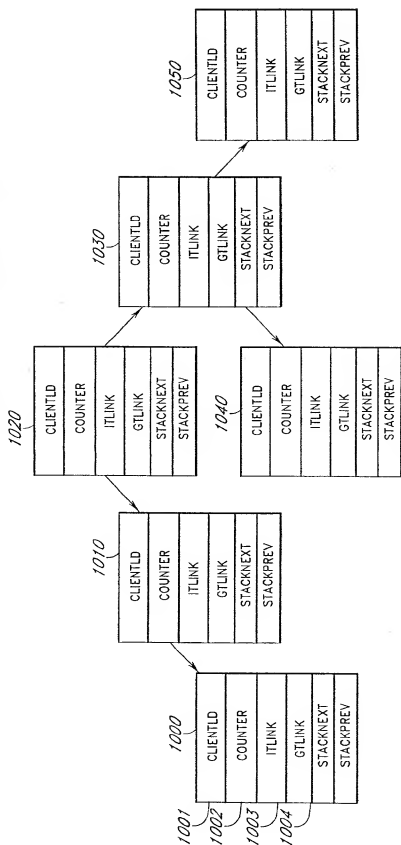


FIG. 10

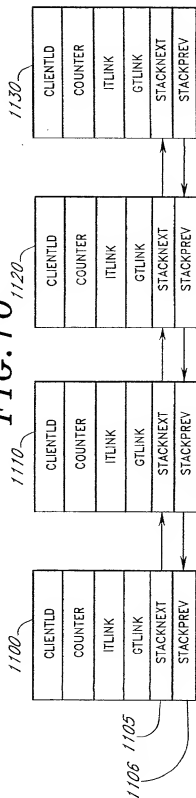
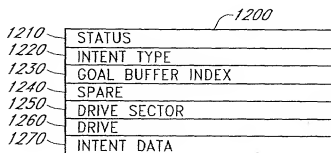
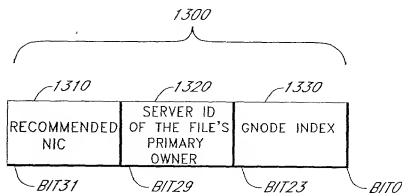


FIG. 11

**FIG. 12****FIG. 13**

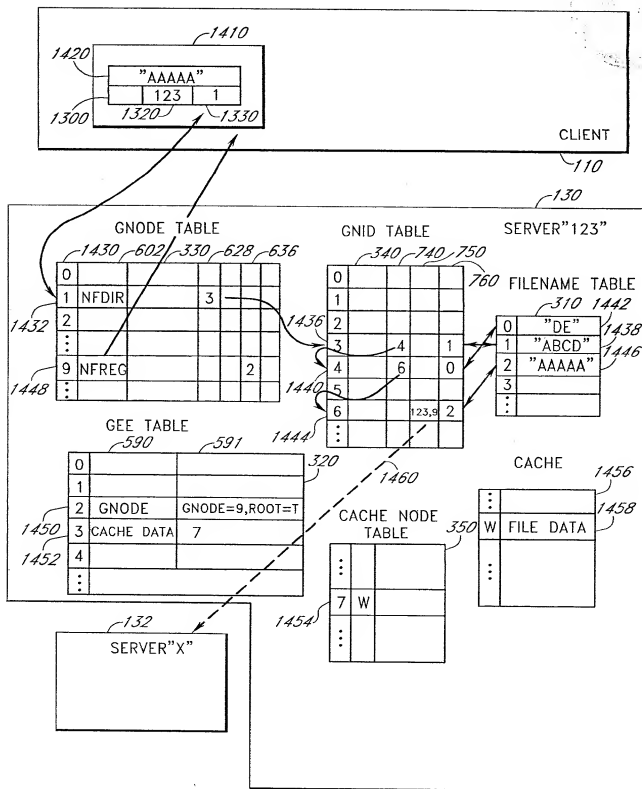


FIG. 14A

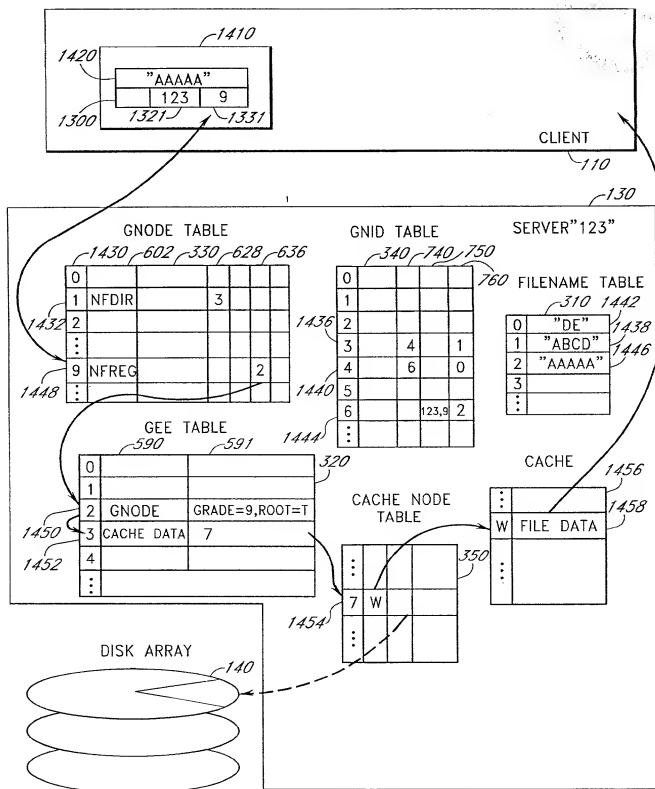


FIG. 14B

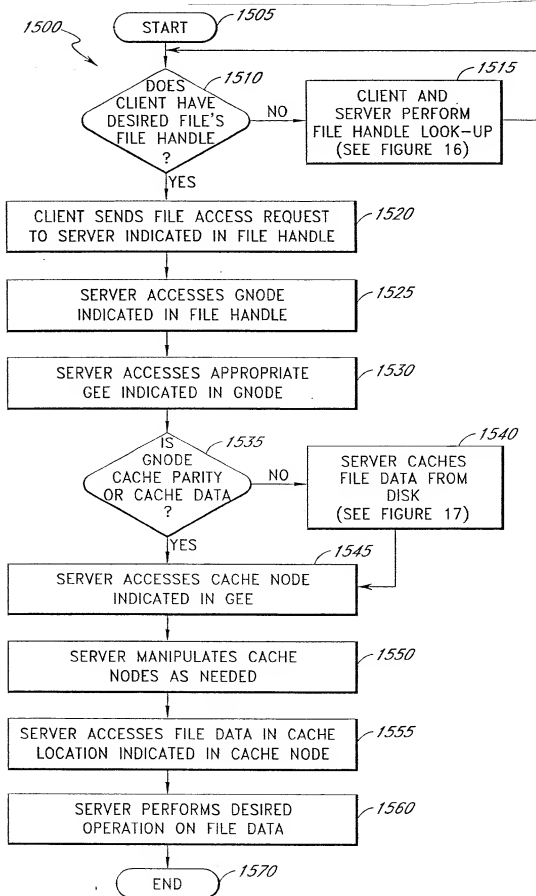


FIG. 15

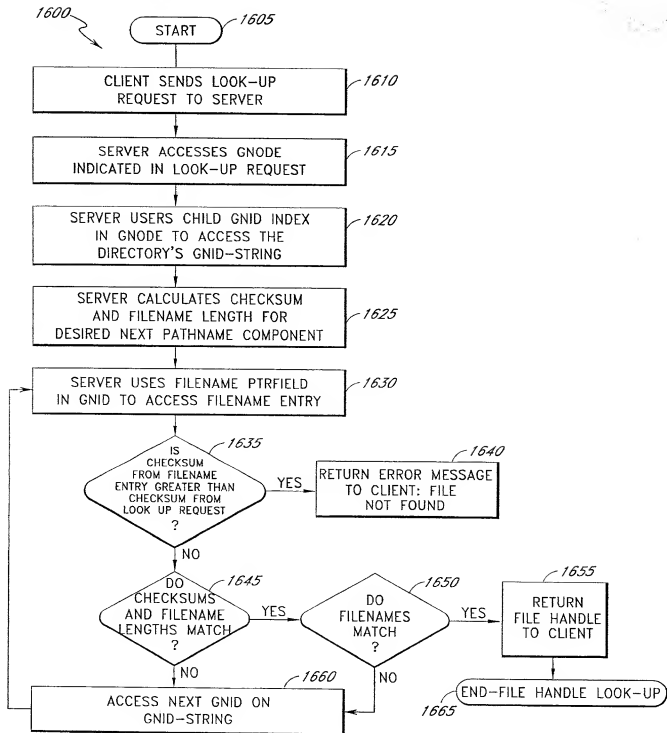


FIG. 16

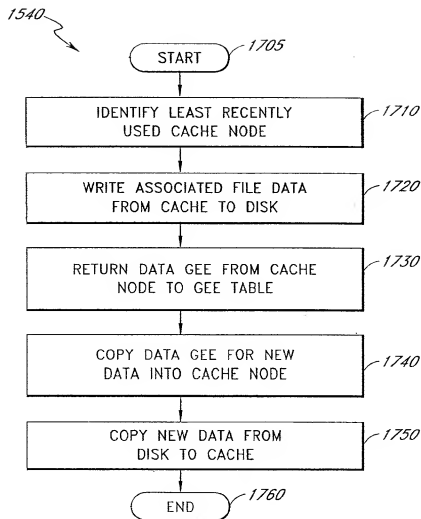


FIG. 17

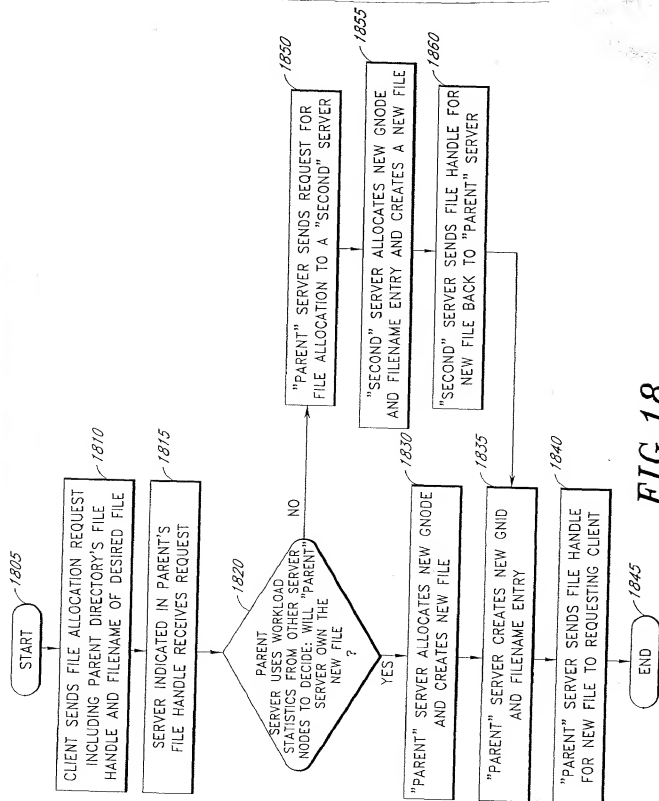


FIG. 18

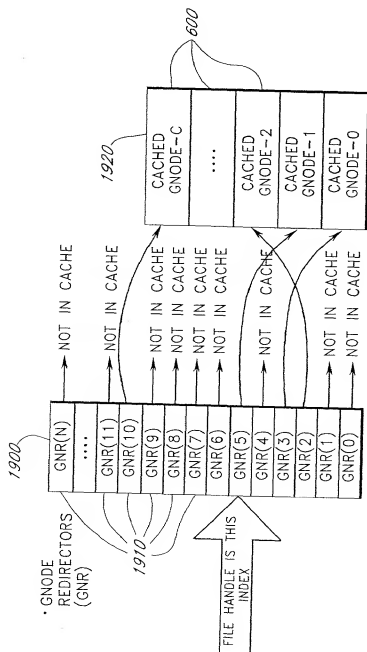
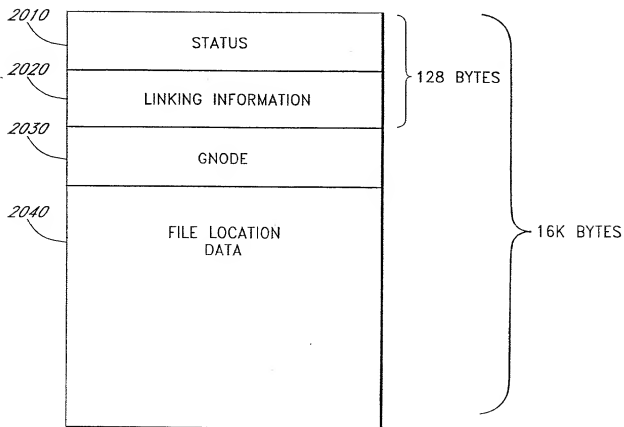


FIG. 19

**FIG.20A**

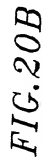


FIG. 20B

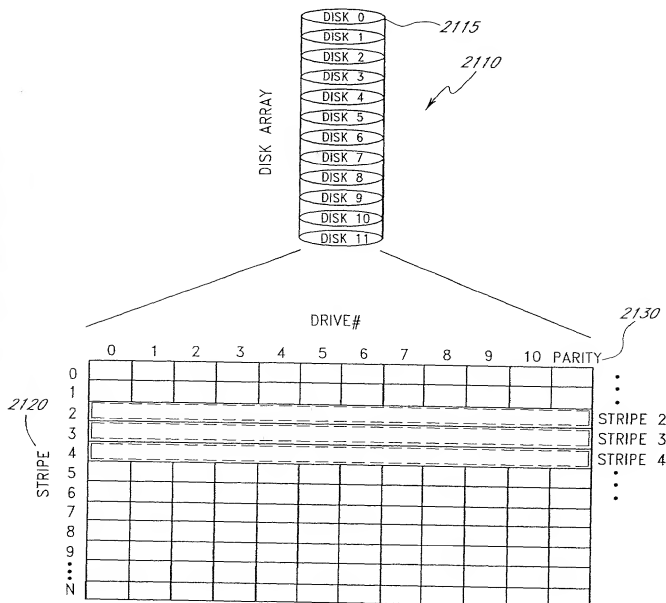
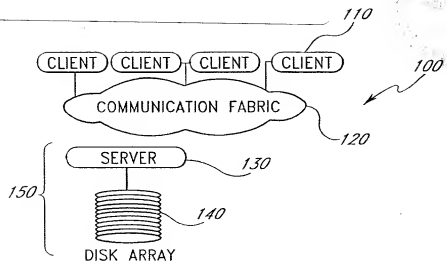
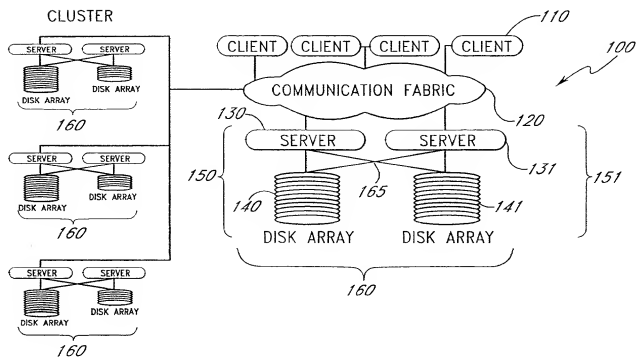
CONVENTIONAL RAID MAPPING
(PRIOR ART)

FIG. 21

**FIG. 22A****FIG. 22B**

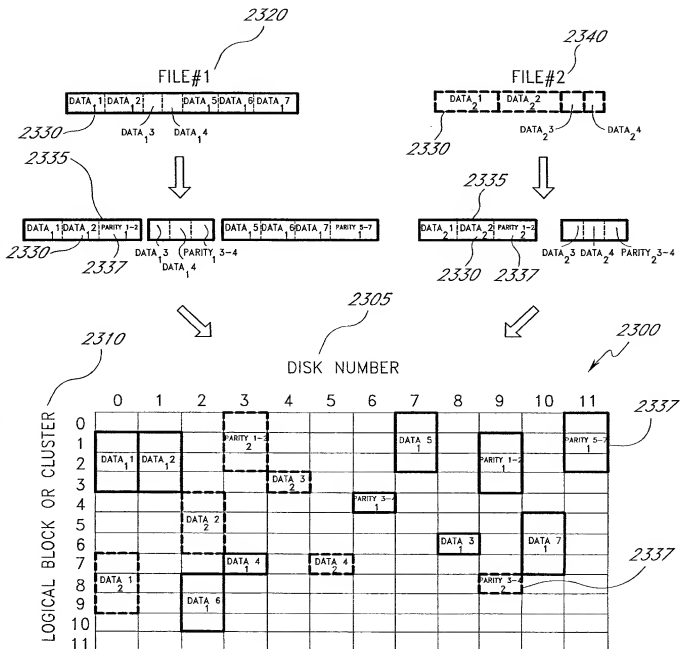
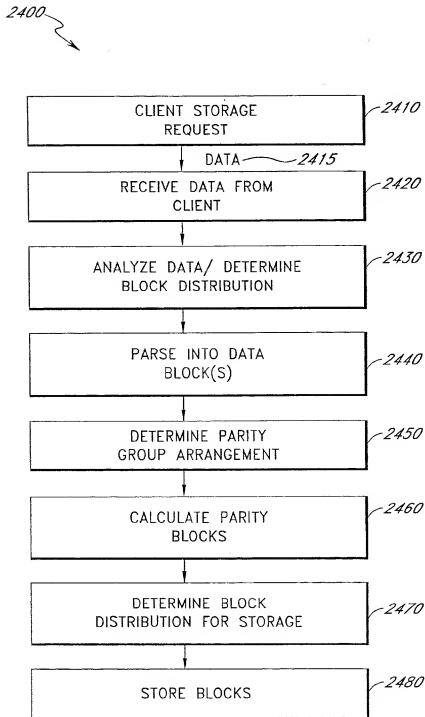


FIG.23



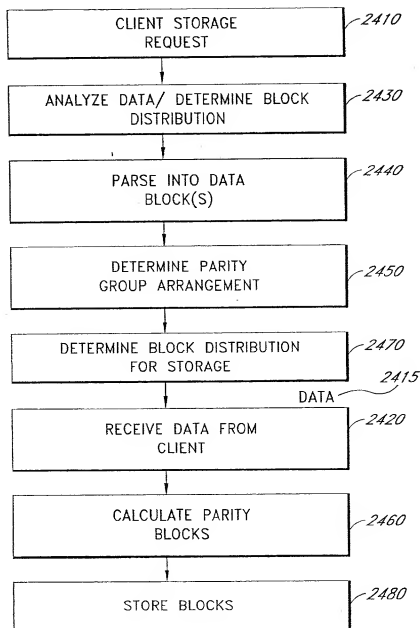
2405
↘

FIG. 24B

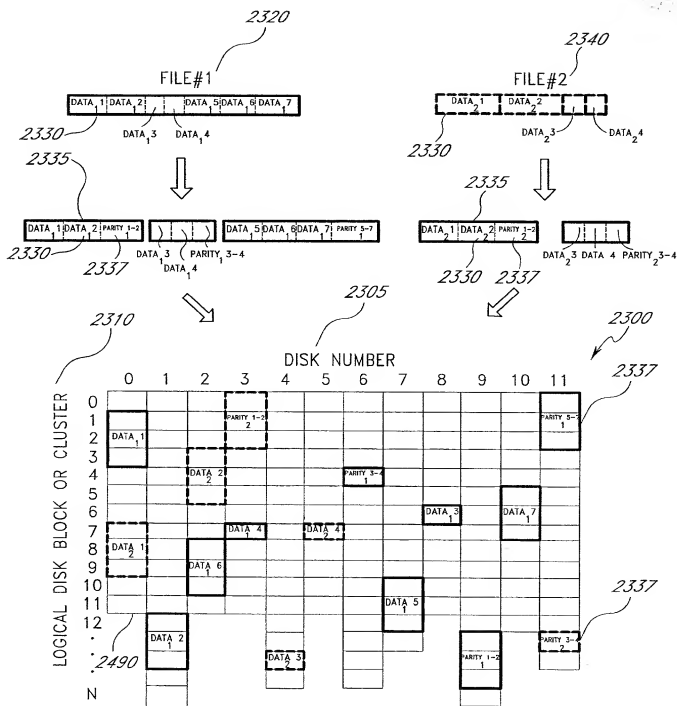


FIG.25

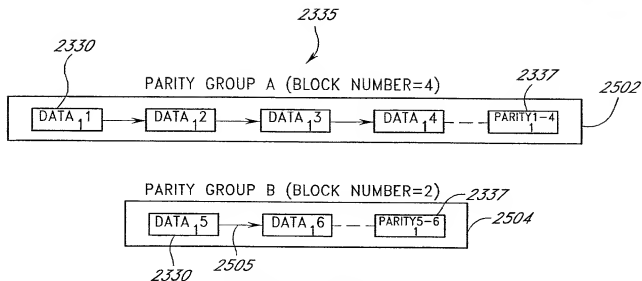


FIG. 26A

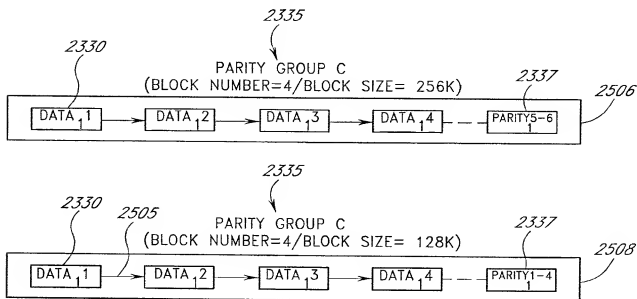


FIG. 26B

DISK ARRAY INITIALIZATION USING GEE TABLE
SPACE ALLOCATION

2532 INDEX	2534 G-CODE	2536 DATA	2542
...	
45	GNODE	EXTENT=2	
46	DATA	BLOCKS 456,457:DRIVE 13	
47	DATA	BLOCKS 667,668:DRIVE 15	
48	DATA	BLOCKS 112,113:DRIVE 19	
49	PARITY	BLOCKS 554,555:DRIVE 2	
...	
76	GNODE	EXTENT=2	
77	DATA	BLOCKS 460,461,462:DRIVE 13	
78	DATA	BLOCKS 671,672,673:DRIVE 15	
79	PARITY	BLOCKS 121,122,123:DRIVE 19	
...	
88	GNODE	EXTENT=2	
89	DATA	BLOCKS 463,464,465:DRIVE 2	
90	DATA	BLOCKS 674,675,676:DRIVE 5	
91	PARITY	BLOCKS 124,125,126:DRIVE 13	
...	

FIG.27

2448

ARRAY PREPARATION/ G-TABLE FORMATTING

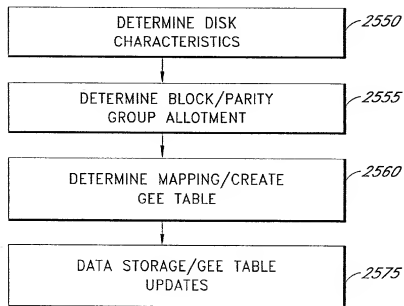


FIG. 28

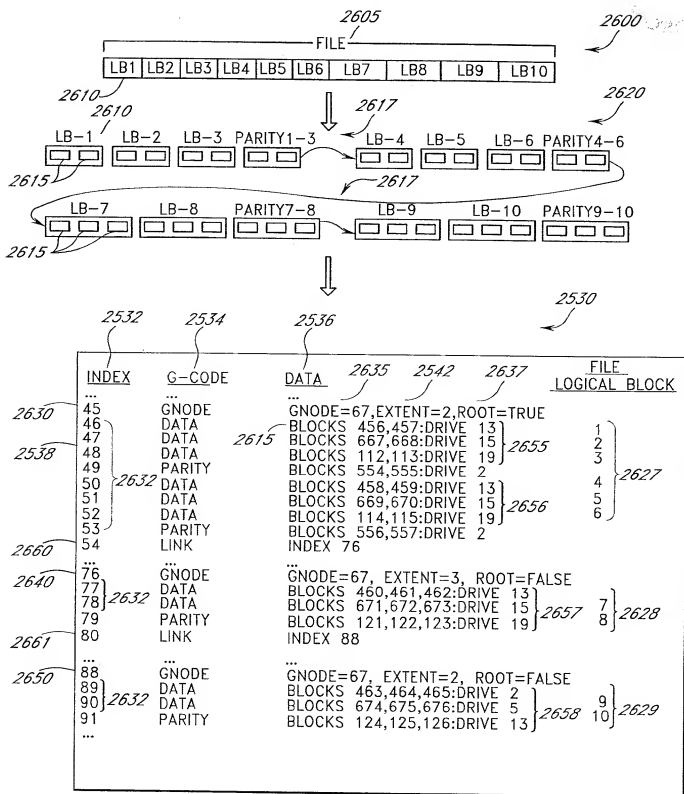


FIG. 29

DRIVE FAILURE RECOVERY MECHANISM

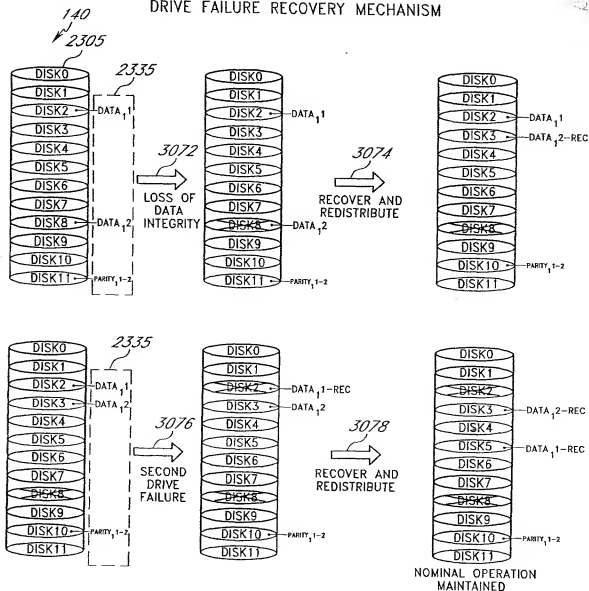


FIG.30



3172

DATA RECOVERY PROCESS

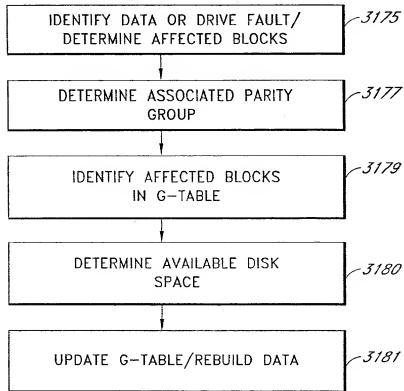
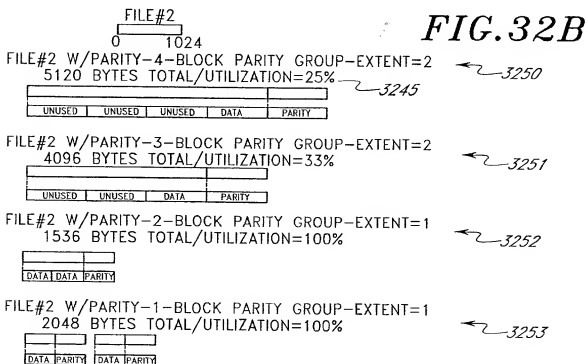
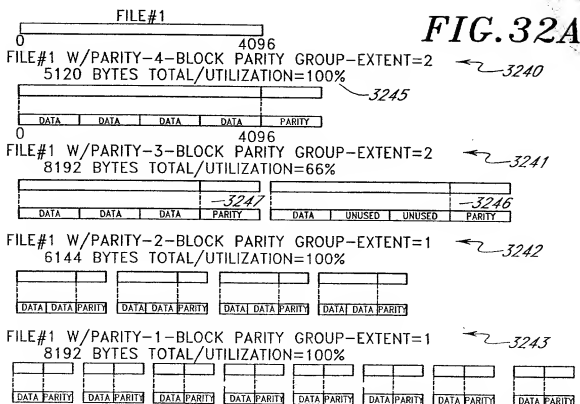


FIG. 31





3360

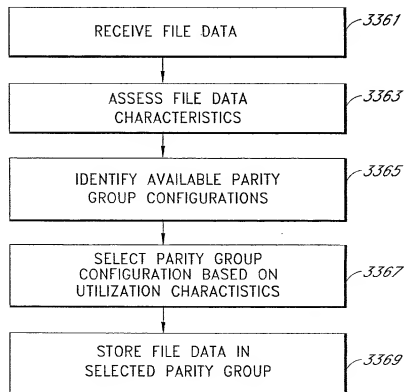


FIG. 33

FIG. 34A

INITIAL ALLOCATION		DISK SPACE%
DATA DATA DATA DATA PARITY	4 BLOCK PANITY	10000 GROUPS 36%
DATA DATA DATA PARITY	3 BLOCK PANITY	10000 GROUPS 28%
DATA DATA PARITY	2 BLOCK PANITY	10000 GROUPS 22%
DATA PARITY	1 BLOCK PANITY	10000 GROUPS 14%

FIG. 34B

DISK USAGE		FREE	OCCUPIED	TOTAL	DISK SPACE%
3480	4 BLOCK PANITY	2500 GROUPS	7500 GROUPS	10000 GROUPS	36%
3481	3 BLOCK PANITY	7500 GROUPS	2500 GROUPS	10000 GROUPS	28%
3482	2 BLOCK PANITY	3500 GROUPS	6500 GROUPS	10000 GROUPS	22%
3483	1 BLOCK PANITY	500 GROUPS	9500 GROUPS	10000 GROUPS	14%

FIG. 34C

REDISTRIBUTION		FREE	OCCUPIED	TOTAL	DISK SPACE%
3480	4 BLOCK PANITY	2500 GROUPS	7500 GROUPS	10000 GROUPS	36%
3481	3 BLOCK PANITY	2500 groups	2500 GROUPS	5000 GROUPS	14%
3482	2 BLOCK PANITY	+10000 GROUPS	3500 GROUPS	6500 GROUPS	22%
3483	1 BLOCK PANITY	OF 3 BLOCK PANITY	10500 GROUPS	9500 GROUPS	20000 GROUPS 28%

REDISTRIBUTION

PARITY GROUP REDISTRIBUTION PROCESSES

3500

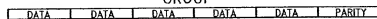
FIG. 35A

PARITY GROUP DISSOLUTION

3510

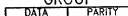
5-BLOCK PARITY GROUP

3515



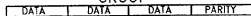
1-BLOCK PARITY GROUP

3520



3-BLOCK PARITY GROUP

3525



OR

2-BLOCK PARITY GROUP

3530



2-BLOCK PARITY GROUP

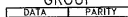
3530



OR

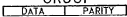
1-BLOCK PARITY GROUP

3520



1-BLOCK PARITY GROUP

3520



1-BLOCK PARITY GROUP

3520

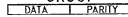


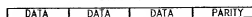
FIG. 35B

PARITY GROUP CONSOLIDATION

3535

3-BLOCK PARITY GROUP

3525



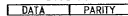
2-BLOCK PARITY GROUPS

3530



1-BLOCK PARITY GROUP

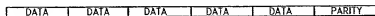
3520

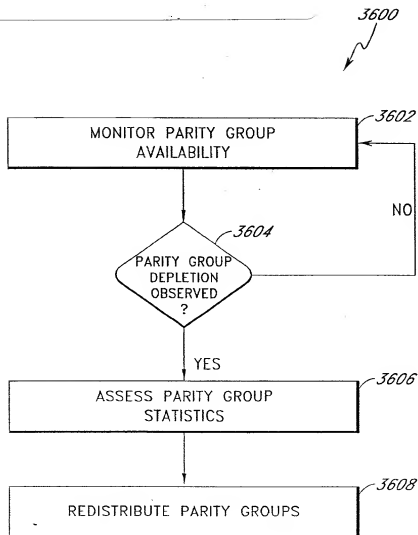


OR

3-BLOCK PARITY GROUP

3515



**FIG. 36**

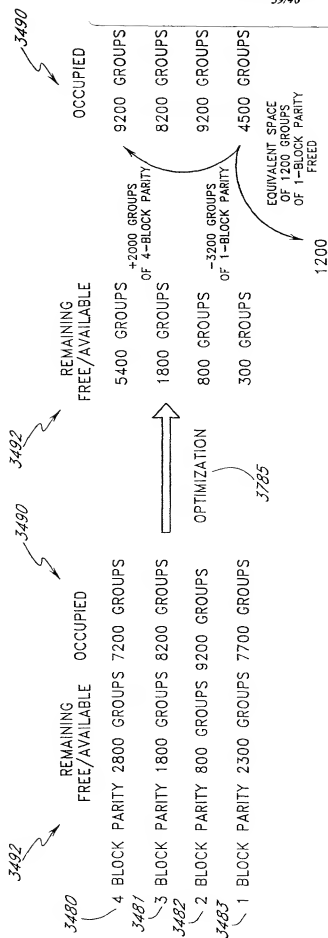
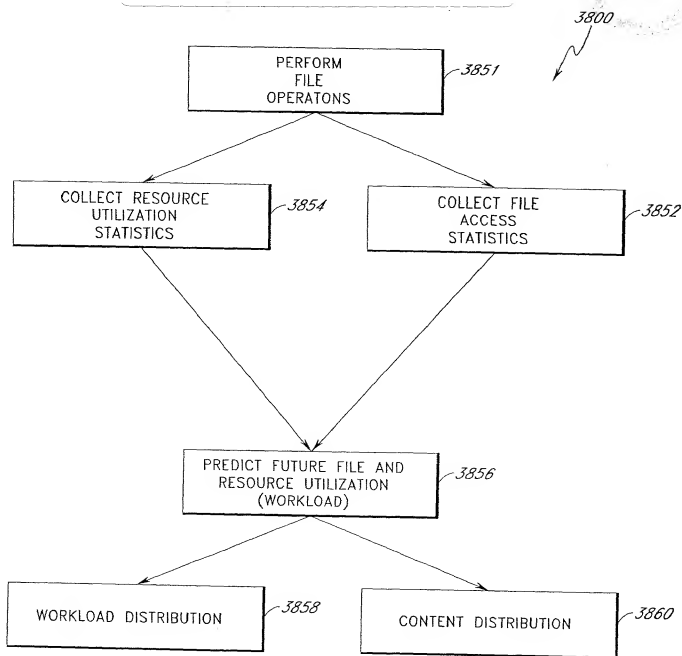


FIG. 37

**FIG.38**

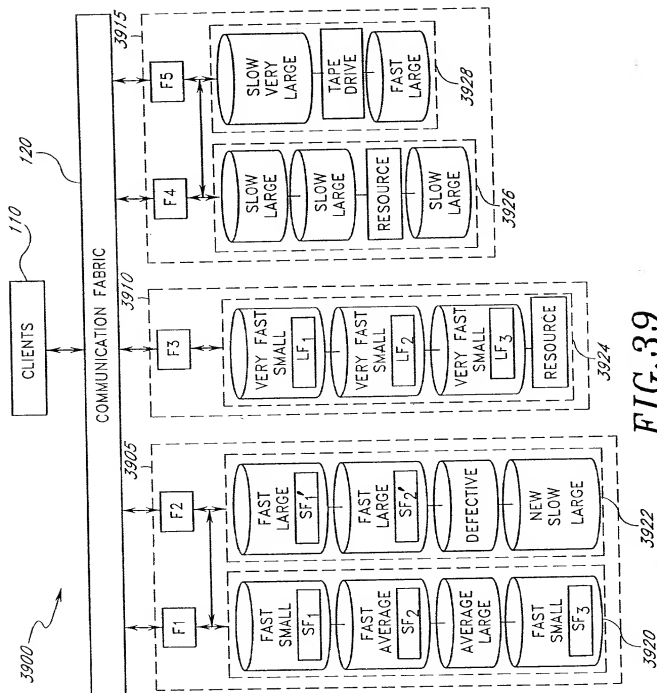


FIG. 39

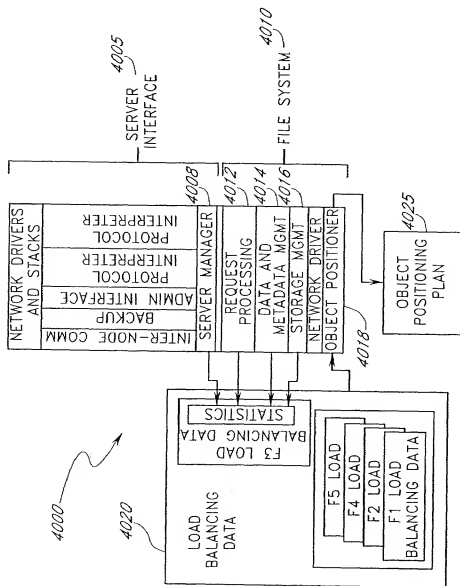


FIG. 40

F3 OBJECT POSITIONING PLAN


- 
- 4025
- PUSH LF TO F4-F5 CLUSTER
 - ISSUE FILE HANDLE FOR LF=STALE
 - IF REQUESTED,
 - SEND ACCEPTANCE FOR COPY OF SF TO F1
 - CREATE COPY OF SF
 - SEND FILE HANDLE OF SF TO F1

FIG. 41

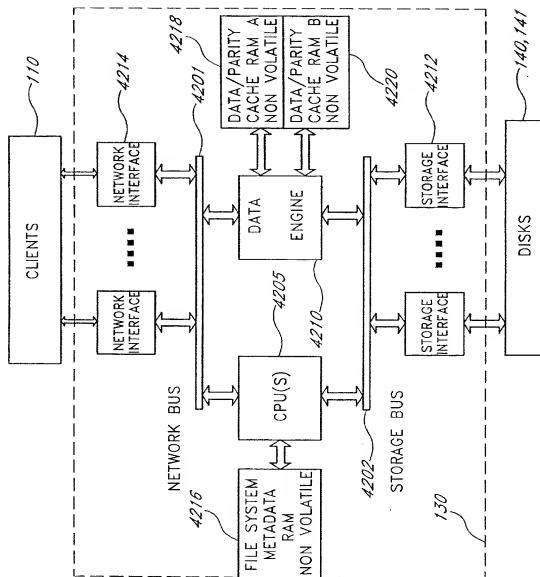


FIG. 42

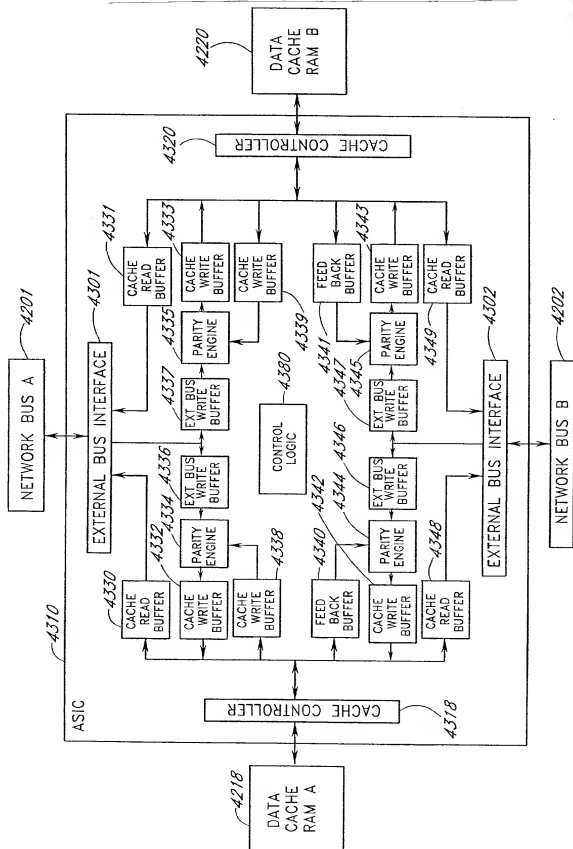


FIG. 43

20070901 00000001

PCI MAP	BLOCK SIZE	OPCODE	SPARE	PARITY INDEX	SPARE	RAM ADR
63.....	62,61.....	59,58.....	56,55.....	51,50.....	35,34,32,31.....	0

FIG. 44

4400